

## CLAIMS

What is claimed is:

1. A method facilitating deployment of volume-based network policies across a  
5 computer network, the method comprising the steps of:  
    monitoring the volume of network traffic generated by a plurality of users;  
    detecting a network utilization milestone relative to at least one of the users;  
and  
    affecting a characteristic associated with the network access provided to the  
10 user(s) identified in the detecting step.
2. The method of claim 1 wherein the affecting step comprises the step of:  
    affecting a performance characteristic of the network access provided to the  
user(s) identified in the detecting step.  
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3. The method of claim 1 wherein the affecting step comprises the step of:  
    degrading the network access provided to the user(s) identified in the  
detecting step.
- 20 4. The method of claim 1 wherein the affecting step comprises the step of:  
    denying further network access to the user(s) identified in the detecting step.
5. The method of claim 1 wherein the affecting step comprises the step of:  
    charging the user(s) identified in the detecting step for further network access.  
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6. The method of claim 1 further comprising the step of  
    notifying a user when the volume of traffic associated with the user approaches  
a network utilization milestone.
- 30 7. The method of claim 1 wherein the detecting step comprises

comparing the volume of traffic associated with a user over a given time interval against a threshold level defining a network utilization milestone.

8. The method of claim 3 wherein network access is degraded only with respect to a predefined set of traffic types.

9. The method of claim 4 wherein network access is denied only with respect to a predefined set of traffic types.

10. The method of claim 1 wherein the monitoring step is performed only with respect to a predefined set of traffic types.

11. A method facilitating deployment of volume-based network policies across a computer network, the method comprising the steps of

15 monitoring the volume of network traffic generated by a plurality of users within a given time interval;

detecting, during the time interval, a network utilization milestone relative to at least one of the users; and,

affecting, for the remainder of the time interval, a characteristic associated with the network access provided to the user(s) identified in the detecting step.

12. The method of claim 11 wherein the affecting step comprises the step of:

affecting a performance characteristic of the network access provided to the user(s) identified in the detecting step.

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13. The method of claim 11 wherein the affecting step comprises the step of:

degrading the network access provided to the user(s) identified in the detecting step.

30 14. The method of claim 11 wherein the affecting step comprises the step of:

denying further network access to the user(s) identified in the detecting step.

15. The method of claim 11 wherein the affecting step comprises the step of:  
charging the user(s) identified in the detecting step for further network access.

5 16. The method of claim 11 further comprising the step of  
notifying a user when the volume of traffic associated with the user approaches  
a network utilization milestone.

17. The method of claim 11 wherein the detecting step comprises  
10 comparing the volume of traffic associated with a user over a given time  
interval against a threshold level defining a network utilization milestone.

18. The method of claim 17 wherein the time interval is a fixed time interval.

15 19. The method of claim 17 wherein the time interval is a sliding time interval.

20. The method of claim 13 wherein network access is degraded only with respect to  
a predefined set of traffic types.

20 21. The method of claim 14 wherein network access is denied only with respect to a  
predefined set of traffic types.

22. The method of claim 1 wherein the monitoring step is performed only with  
respect to a predefined set of traffic types.

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23. A method facilitating deployment of volume-based network policies across a  
computer network, the method comprising the steps of  
registering a user at a network access device connected to a first computer  
network, the network access device including an IP address;

30 associating the IP address with the user;

providing the user access to a second computer network by changing the configuration of a network device in a communication path between the first computer network and the second computer network;

monitoring the volume of network traffic associated with the IP address;

5 detecting a network utilization milestone based on the volume of network traffic associated with the IP address;

changing the configuration of the network device to affect a characteristic associated with access to the second network provided to the user.

10 24. An apparatus facilitating the deployment of volume-based network policies across a first computer network, the first computer network comprising at least one traffic monitoring device operative to monitor the volume of network traffic generated by individual users, and at least one network control device operative to control access to a second computer network, comprising

15 a user account database maintaining the respective volumes of network traffic generated by a plurality of users;

a data logging module operative to collect network utilization data from the traffic monitoring device and store the network utilization data in the user account database;

20 a network usage monitor operative to:

scan the user account database to detect a network utilization milestone reached by a user based on the volume of network traffic associated with the user, and

25 modify the configuration of the network control device to affect a characteristic of access to the second computer network for the user.

25. The apparatus of claim 24 further comprising a user interface module operative to register new users and create corresponding user accounts in the user account database.

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26. The apparatus of claim 25 wherein the apparatus, in response to registration of a new user, is operative to modify the configuration of the network control device to allow access to the second computer network for the new user.

5 27. A system facilitating the deployment of volume-based network policies across a first computer network, comprising

a bandwidth management device operably connected to a communication path between the first computer network and a second computer network,

wherein the bandwidth management device is operative to:

10 monitor the volume of network traffic generated by individual hosts on the first computer network, and

enforce bandwidth utilization controls associated with individual hosts on data flows generated by the respective individual hosts;

a user management server operative to:

15 detect a network utilization milestone based on the volume of network traffic associated with an individual host; and,

in response to a network utilization milestone, change the configuration of the bandwidth management device to associate bandwidth utilization controls corresponding to the milestone with the individual host.

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28. The system of claim 27 wherein the bandwidth management device is operative to redirect data flows generated by unknown hosts on the first computer network to the user management server; and wherein user management server is operative to register unknown hosts and change the configuration of the bandwidth management  
25 device to associate the host with bandwidth utilization controls operative to permit access to the second network.

29. The system of claim 27 wherein the bandwidth utilization controls associated with the milestone are operative to deny access to the second computer network.

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30. The system of claim 27 wherein the bandwidth utilization controls associated with the milestone are operative to degrade access to the second computer network.

31. The system of claim 27 wherein the bandwidth management device is further  
5 operative identify network traffic types associated with data flows traversing the device; and wherein the user management server is operative to configure bandwidth utilization controls applicable to traffic types identified by the bandwidth management device.

10 32. The system of claim 27 wherein the bandwidth management device and the user management server reside on the same device.